NASA Briefs

Student satellite eyes atmospheric physics

The first in a new class of inexpensive, student-built space missions funded by NASA launched Feb. 5 from Vandenberg Air Force Base, Calif. The mission, the Student Nitric Oxide Explorer, is investigating the effects of energy from both the Sun and the magnetosphere on nitric oxide densities in the Earth's upper atmosphere. The Student Nitric Oxide Explorer spacecraft was designed, built, and is being operated by the University of Colorado's Laboratory for Atmospheric and Space Physics in Boulder. SNOE is the first of three student satellite projects selected to be built under the Student Explorer Demonstration Initiative program. The spacecraft was launched into orbit by a Pegasus XL rocket built by Orbital Sciences Corp., Dulles, Va. The 254-pound spacecraft carries three instruments: an ultraviolet spectrometer, a five-channel solar soft X-ray photometer; and a two-channel auroral photometer.

Hughes to build new weather satellites

NASA and the National Oceanic and Atmospheric Administration have awarded a $423 million contract to Hughes Space and Communications, El Segundo, Calif., for the manufacture, launch and delivery on-orbit of up to four weather-monitoring Geostationary Operational Environmental Satellites. The procurement of the GOES-N through -Q spacecraft marks the extension of this multi-satellite program designed to provide continuous monitoring of the Earth's weather systems and the related space environment. The new spacecraft will be used to continue and enhance the functions of the current GOES I-M series of spacecraft.

Research get grip on runaway runways

NASA is leading an international effort to help prevent accidents by aircraft losing traction on icy runways. Ice or snow on a runway was a factor in approximately 30 airplane accidents between 1983 and 1995, according to reports from the National Transportation Safety Board. A research team is in Canada proving technology concepts for better understanding of runway friction, improved tire designs, better chemical treatments for snow and ice, and new types of runway surfaces that minimize bad weather effects. The team has developed an international runway friction indexing method.

Don't be fooled by electronic mail hoaxes

"PENPAL," "Join the Crew," "Ghost," "GOOD TIMES"—these are all colorful names for electronic mail notes that have been circulating around the United States via the Internet. These and many other similar notes all purport to be warnings to computer users. If you open the note, the warnings invariably read, irreparable damage will occur to the information stored in your workstation.

"These notes have something else in common," said Sandra Price who oversees JSC's computer Virus Response Team, "every one of them is a hoax. People release these false messages into the Internet accompanied by details of very spectacular damage that will occur if you open the note. The warnings are accompanied by a request to send the note on to everybody you know."

Well-meaning people actually do forward these notes, according to Frank Martin, JSC's deputy center computer security manager, some of them to massive distribution lists. "Unfortunately, JSC hasn't been immune to these hoaxes. We've seen 14 of them circulating through JSC's mail system since 1995, not counting those that seem to return about every three months."

Although the viruses don't exist, users sending notes to massive distribution lists have threatened to bring JSC's electronic mail system to its knees. Recently, one user attempted to forward a hoax message to every name in the JSC Global Address List. Fortunately, the note was stopped quickly before damage could be done.

Several recent hoaxes have involved chain letters of another kind. The American Cancer Society's name was used in a hoax involving a non-existent, terminally ill young person whose supposed last wish was to circulate an electronic chain letter. Hoaxes attempt to manipulate the fears or sentiments of those who receive them. When receivers forward the notes, they are the ones actually doing the damage because they clog the mail system.

JSC's computer users now will find a new link off the JSC Internal Home Page that will give them more information about hoaxes. The new link becomes active today. Users will find a brief description of all the hoaxes the JSC Computer Security Manager's Office knows about, along with links to pursue. Sandra Price, curator, welcomes readers' questions and comments at x37682.

Lee Snapp, Center Computer Security Manager, encouraged the entire JSC community to help protect the center's electronic mail system by making use of this new page.

"The supply of new hoaxes seems to be unlimited," he added. "If you run into a new one not on our list, don't distribute the note; do call your organization's Computer Security Official."

JSC Photo by Steve Candler

LEAPIN' LARIATS—Astronaut William Gregory prepares to throw the lasso around a "calf" as Katherine McNeal looks on during JSC Rodeo Liftoff activities. He successfully caught the slow-moving little calf by one horn. McNeal is a member of the Houston Livestock Show and Rodeo speaker's bureau and practices calf roping every day to be able to put on the presentations to school and civic groups in promoting the rodeo.

Budget includes X-38 start in 2000

(Continued from Page 1)

resources it needs to pioneer the future.

"Last year was exciting. I'm willing to bet this year will be even better," Goldin said, noting that NASA's 40th anniversary is fast approaching. "Rest assured ... as we have for the past forty years ... NASA will perform. We will meet our commitments ... and we'll inspire millions—young and old—along the way."

Clinton also saluted Sen. John Glenn, the first American to orbit the Earth, who will return to space on STS-95 this fall.

"This October, a true American hero, a veteran pilot of 149 combat missions and one five-hour space flight that changed the world, will return to the heavens. God speed, John Glenn," he said. "John, you will carry with you America's hopes. And on your uniform once again, you will carry America's flag marking the unbroken connection between the deeds of America's past and the daring of America's future."

President Clinton's proposed budget for fiscal 1999 includes full funding for the International Space Station and a new start for X-38 assured crew return vehicle being developed at JSC.

"Over the next two years, space shuttle operations will continue the transition to a single prime contractor," Goldin said. "And this budget will allow us to complete the major shuttle upgrades already under way as well as maintaining the funding for future upgrades. In sum, I am proud that the space shuttle team is delivering on its promise: We meet our flight rate. We have less and less in-flight hardware problems. We're flying for less money. And we are safer today than ever before.

"As for new projects, we have identified as a start-up in fiscal year 2000 … the space station's crew return vehicle," Goldin said. "During the next year, we will closely watch the X-38 development and monitor cost projections. That way we can verify the appropriate funding levels when we begin this new start-up."

JSC Quality System audit approaching

If JSC passes an external audit of the JSC Quality System, scheduled for Feb. 24 and 25, it will become the first NASA center and the largest federal government installation to achieve ISO 9001 certification.

Auditors from National Quality Assurance will concentrate on the subject of Corrective and Preventive Action and whether JSC has fully implemented the corrective action requirements contained in the ISO 9001 standard.

ISO 9000 Office Director Lee Norbraten said that a disciplined approach to corrective action is critical to the overall operation of JSC. "Corrective action, if managed well, is the single element of the ISO 9001 standard that offers a return on the efforts that we have expended to achieve registration," Norbraten said.

"'How does corrective action under ISO 9000 differ from how we have always done corrective action at JSC?' If we are talking about responding to a critical technical problem, the answer is probably very little," he explained. "This center wrote the book on the effective disposition of hardware and software problems, especially those that involve flight safety or mission performance. The differences are more evident when we look at how JSC responds to other types of issues, in particular, those that involve management or resource factors. The ISO 9000 based system generally requires that we submit those kind of issues to the same level of scrutiny as the technical issues.

"Under ISO 9000, the focus is generally more on broken 'process' than broken 'product'. Well-managed corrective action always puts more emphasis on preventing problems before they occur than fixing a problem after it happens. Thus, it places on process owners at all levels the responsibility to monitor their process by maintaining objective data, and then applying their best technical and managerial judgment as to when action is needed," Norbraten said.

A common misconception about corrective action is that it must be employed for every reported problem, he added. But only a small percentage of problems should trigger corrective action as the ISO 9000 standard defines it: for recurring technical problems, high risk or high cost issues, or issues that affect multiple organizations.

Most JSC managers and supervisors participated in an extensive Corrective Action Tutorial during January. It is now their duty to ensure that people within their organizations have a correct understanding of corrective action and how it is implemented in their work area. A pocket guide on corrective action has been distributed to all JSC and on-site contractor workers.

"ISO 9000 registration is unimportant relative to the need to do corrective action well," he said. "We need everyone's help to make sure our Quality System adds value to the ongoing work at JSC."

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Space station pact charts course for human destiny

(Continued from Page 1)

Europe, through the European Space Agency, will provide a pressurized laboratory and flight elements to re-boost and to supply the space station. Japan will provide an experimental module, including an exposed facility, experimental logistics modules and flight elements to re-supply the space station. Russia, through the Russian Space Agency, will provide infrastructure elements, including service, research and life support modules, payload equipment and flight elements to supply and re-boost the space station. And the United States, through our own NASA, will also provide infrastructure elements, including a habitation module, a laboratory module, a payload equipment and flight elements to support the station, including the space shuttle.

"When complete, I think we all know that the International Space Station will provide a unique international facility. We can anticipate major advances in microgravity research, in life sciences, biotechnology, just to name a few examples of how this facility will be used and prove to be a valuable resource in the 21st century," Gibbons said. "To the people in this room, and indeed to people around the world, the station serves as a very powerful symbol of what great nations can do through peaceful cooperation. It will stand as a visible and concrete symbol of the tremendous possibilities open to us as we cross into the next millennium."

Led by the U.S., the International Space Station will be the largest, most complex international cooperative science and engineering program ever attempted. Taking advantage of the technical expertise from participating countries, the station will bring together scientists, engineers and researchers from around the globe to assemble a premier research facility in orbit.

"The International Space Station's unlimited potential is matched only by what I hope is by our limitless imagination, because in addition to the possibilities I just mentioned, the international space station will also most importantly provide the promise of further exploration," Goldin said. "If it is our destiny to explore, which I believe it is, then the International Space Station is the next step. But today is the first step. Every so often people come together to explore new frontiers, to inspire our children and to benefit all of humankind. It is a rare occasion, however, when it is not only the people coming together, but countries; this is such a time," Goldin said.

"Today we chart a course for the future, and, in doing so, we will change the course of human history," Goldin said. "Yes, the eyes of the people are upon us, but so are their hopes and dreams. And for the citizens of the city in space, indeed for the citizens of the world, this is just the beginning."

With the launch of the first space station element later this year, the partnership will assemble more than 100 components in low-Earth orbit over the next five years, using some 45 assembly flights. As currently envisioned, the station will support a crew of up to seven and include five complete pressurized laboratories and attached external sites for research.

NASA-JSC